ONYX-BE101

10.1” Mini Bedside Terminal

SAMSUNG S5PV210 1GHz Processor

Ultra Low Power Consumption

Fanless & Compact design

BE101 Manual 2nd Edition

June, 2013

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Packing List

Before you begin installing your Bedside Terminal, please make sure that the following items have been shipped:

- BE101 Bedside Terminal.
- VESA Mount Screws
- Utility CD-ROM (Please insert the ONYX-BE101 CD-ROM into external CD-ROM drive.) which Contains User's Manual (in PDF format), Drivers and Utilities

If any of these items are missing or damaged, you should contact your distributor or sales representative immediately.

Headquarters

Onyx Healthcare Inc.

2F., No.135, Ln. 235, Baoqiao Rd., Xindian Dist.,

New Taipei City 231, Taiwan (R.O.C.).

TEL: +886-2-8919-2188

FAX: +886-2-8919-1699

E-mail: sales@onyx-healthcare.com

http://www.onyx-healthcare.com

Worldwide Offices:

Onyx Healthcare, USA Inc.

2663 Saturn street, Brea, CA 92821, USA

Tel : +1-714-996-1800

Fax: +1-714-996-1811

Email: usasales@onyx-healthcare.com

Onyx Healthcare EUROPE B.V.

Ekkersrijt 4002, 5692 DA Son, The Netherlands

Tel : +31-(0)499-462020

Fax: +31-(0)499-462010

Email: eusales@onyx-healthcare.com

Onyx Healthcare Technology GmbH

An der Trift65d

63303 Dreieich , Germany

TEL: +49-(0)61033-7479-00

Fax: +49-(0)61033-7479-49

Email: eusales@onyx-healthcare.com

Onyx Healthcare (Nanjing) INC.

Room 1318, Metallurgy Building , East Zhongshan Road,

Nanjing, China

Tel: +86-025-58859841

Fax: +86-025-85088070

Email: Jonwang@onyx-healthcare.com

Onyx Healthcare Singapore PTE LTD

57 Genting Lane, #07-00, Singapore 349564

Tel: +65-67498749

Fax +65-67461595

Email: sgsales@onyx-healthcare.com

Safety & Warranty

1. Read these safety instructions carefully.
2. Keep this user's manual for later reference.
3. Disconnect this equipment from any AC outlet before cleaning. Do not use liquid or spray detergents for cleaning. Use a damp cloth.
4. For pluggable equipment, the power outlet must be installed near the equipment and must be easily accessible.
5. Keep this equipment away from humidity.
6. Put this equipment on a reliable surface during installation. Dropping it or letting it fall could cause damage.
7. The openings on the enclosure are for air convection. Protect the equipment from overheating. DO NOT COVER THE OPENINGS.
8. **Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.**
9. Position the power cord so that people cannot step on it. Do not place anything over the power cord.
10. All cautions and warnings on the equipment should be noted.
11. If the equipment is not used for a long time, disconnect it from the power source to avoid damage by transient over-voltage.
12. Never pour any liquid into an opening. This could cause fire or electrical shock.
13. Never open the equipment. For safety reasons, only qualified service personnel should open the equipment.

14. If any of the following situations arises, get the equipment checked by service personnel:
    a. The power cord or plug is damaged.
    b. Liquid has penetrated into the equipment.
    c. The equipment has been exposed to moisture.
    d. The equipment does not work well, or you cannot get it to work according to the user's manual.
    e. The equipment has been dropped and damaged.
    f. The equipment has obvious signs of breakage.
15. **DO NOT LEAVE THIS EQUIPMENT IN AN UNCONTROLLED ENVIRONMENT WHERE THE STORAGE TEMPERATURE IS BELOW -20° C (-4°F) OR ABOVE 60° C (140° F). IT MAY DAMAGE THE EQUIPMENT.**

16. **External equipment intended for connection to signal input/output or other connectors, shall comply with relevant UL / IEC standard (e.g. EN 60950-1 for IT equipment and ES 60601-1 series for systems.**

17. **WARNING: To avoid the risk of electric shock, this equipment must only be connected to supply mains with protective earth.**

18. **" WARNING: No modification of this equipment is allowed"**
19. Replaceable Batteries: The equipment contains replaceable lithium battery, user replaceable type: The following warning in

user manual and service instructions.

** Caution: Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type of battery recommended by the manufacturer. Dispose of used batteries according to the manufacturer instruction.*

Classification

1. Degree of production against electric shock: not classified
2. Equipment not suitable for use in the presence of a flammable anesthetic mixture with air or with oxygen or nitrous oxide.
3. Mode of operation: Continuous
4. Type of protection against electric shock: Class I equipment
5. **ME EQUIPMENT must be connected to an appropriate power source, if loss of the power source would result in an unacceptable RISK.**

FCC

This device complies with Part 15 FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received including interference that may cause undesired operation.

Safety Symbol Description

The following safety symbols are the further explanations for your reference.

	Attention, consult ACCOMPANYING DOCUMENTS.
	Ground wire *Protective Ground wire.*
	Medical equipment with respect to electric shock, fire and mechanical hazards only in accordance with ANSI/AAMI ES 60601-1, and CSA C22.2 NO 60601-1-08-CAN/CSA
	Touch Panel and Plastic Enclosure treat as Type B applied part.

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Chapter

1

General Information

1.1 Introduction

—A bedside terminal solution for ultimate patient services that boosts patient satisfaction and well-beings.

ONYX-BE101 offers the highly scalable bedside infotainment solution to enhance patient experiences within the hospital. Packaged with renowned software solution partners,10.1" ONYX-BE101 bedside terminals provides patients with capabilities like Entertainment on Demand, Online Access, VoIP Phone, etc.

Clinical Applications

- Ward, Nursing Station/Cart

Service Capabilities – BE101

- **Hospital Information Access –**
  - Patient Record Access
  - Treatment Progress Reporting (i.e. Medical Charting)
  - Dietary/Meal Ordering Service
- **Entertainment on Demand**
  - Video-on-Demand
  - TV/Radio Broadcasting

1.2 Feature

* Samsung S5PV210 1GHz Processor
* 10.1” (16:9) wide color TFT LED LCD display (1024 x 600)
* 512MB DDR2 RAM
* Fanless & Compact Design
* Smart Card Reader
* 2 x 2external USB ports (works with keyboard, mouse and USB disk)
* High quality stereo speakers (2 x 2W speakers, 90dB audible)
* Built-in Microphone
* Proximity sensor (Power saving)
* Power over Ethernet
* Optional features:

-- Internal RFID

-- Bluetooth 2.1 + EDR and 802.11 b/g w/ internal wireless antenna

-- 2MP USB Camera(UVC)

* Multimedia entertainment: TV/ Movie, VOIP, Web, Web Radio
* Hardware Decoder: H.264 up to 720p, MPEG4 up to 720p, MPEG2 up to D1

1.3 Specification

Model Number	
ONYX-BE101	
Model Description	
10.1” Low Power Multi-touch Mini Bedside Terminal with Multimedia support	
Main Specification	
CPU Processor	SAMSUNG S5PV210 1GHz
System Memory	512MB DDR2-533MHz
Display	10.1” Color TFT LED LCD
Expansion	1 x Smart Card Reader 1 x RFID (RS-232 Interface)
OS Support	Android 2.3 Froyo (SDK for SW party developing AP & UI)
Main Specification (Cont.)	
System Storage	512MB NAND Flash - (Boot loader and Kernel)
User Storage	1 x Internal SD socket
Button	Volume +/ Volume – Brightness + / Brightness – LCD On/Off Reset
Support Content	IP TV, Web/Gaming, Internet Radio H.264 up to 720p, MPEG4 up to 720p, MPEG2 up to D1
I/O	

Audio	1 x Line out (3.5mm Jack) 1 x Internal MIC 1x Line in (3.5mm Jack)
USB	2 x External USB2.0 on bottom I/O 1 x Internal USB2.0 (UVC Camera)
WiFi	802.11 b/g (SDIO Interface)
Debug Port	1 x RS-232 (development purpose)
Touch Key Function	Audio control (Volume+, Volume-) LCD on/off Brightness control (Brightness+, Brightness-)
Video	1 x Video-in through TV Tuner Card
Camera	UVC Camera (D1 resolution)
Speaker	2 x 1W high quality speakers
Support Content	IPTV, Web/ Gaming, Internet Radio H.264 up to 720p, MPEG4 up to 720p, MPEG2 up to D1
I/O (Cont.)	
Speaker	2 x 2W High Quality Speakers
Microphone	1 x Internal Microphone
LCD Specification	
Model	ONYX-BE101 Series
Display Type	10.1” Color TFT LCD
Max. Resolution	1024 x 600
Max. Colors	16.7M

Dot Size (mm)	0.3 x 0.3
Luminance (cd/m^2)	300 nits
View Angle	55/55(H right/Left)
	30/55 (V upper/lower)
Contrast Ratio	1000:1
Back Light MTBF	50,000 Hrs

Note:

All ONYX's LCD products are manufactured with High precision technology. However, there are a small number of defective pixels in all LCD panels that are not able to change color. This is a normal occurrence for all LCD displays from all manufacturers and should not be noticeable or objectionable under normal operation. ONYX LCD panels are qualified for industry standard conditions in the following: total 7 dead pixels on a screen or if there are 3 within 1 inch square area of each other on the display.

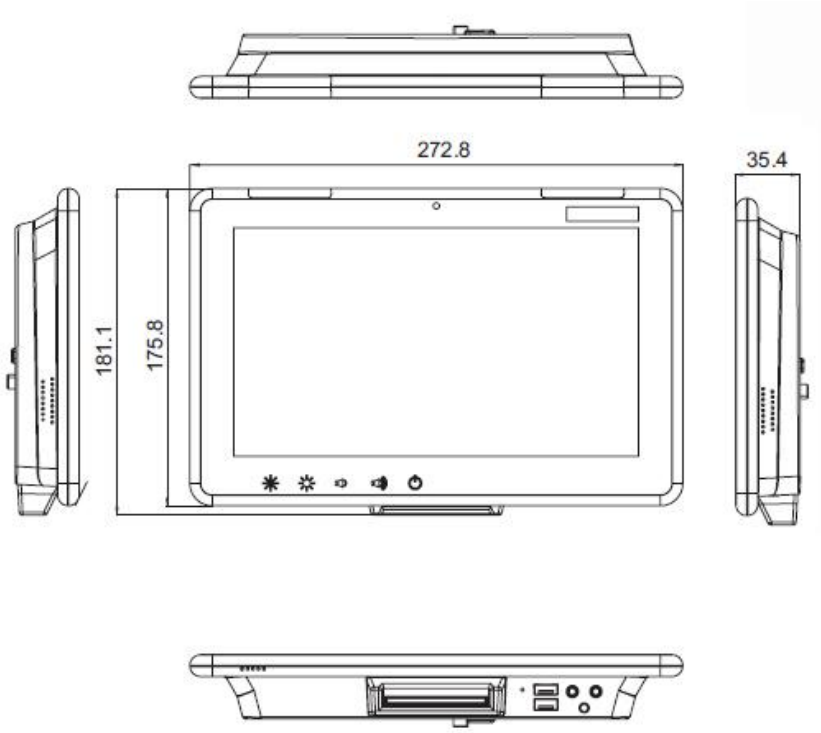
Touch Screen	
Type	4 Wire Resistive
Resolution	1024 x 600
Light Transmission	> 78%
Lifetime	10 million activities

Mechanical Specifications	
Model	ONYX-BE101 Series
Architecture	Close-Frame Design
Front Bezel	IP65 in front for easy cleaning
Color	Front and back with RAL9003 White color
Mounting / Holder	VESA 75/100mm, Desk Top, Wall Mount\

Construction	3mm ABS + PC Plastic Housing
Dimension (WxHxD)	265 mm x 195.5 mm x 37mm
Carton Dimension	403 mm x 370 mm x 367 mm (4 pcs /Carton)
Net Weight	830g
Gross Weight	5 Kg (4 pcs/ Carton)
Packing Filler	PE foam
Buttons	5 membrane keys design on front touch panel
Infection control design	Anti-microbial design (Optional)
Smart Card Readers	Bottom center placement on the unit
Power Supply Requirement	
Power Supply	DC 12V **(Eljintek Inc)**
Model No.	MPU30A-3-B
Input Voltage	AC: 100 – 240V @ 0.8A - 0.4A; 50-60Hz
Output Voltage	DC: 12V @ 2.5A
MTBF	150,000 hrs minimum at full load @ 25°C
Environmental Specification	
Operating Temperature	0°C ~ 40°C (32°F ~ 104°F)
Storage Temperature	-20°C ~ 60°C (-4°F ~140°F)
Pressure	850~1000hPa(Operating) / 700~1060hPa(Transport / Storage)
Storage Humidity	5% ~ 95% @ 40°C, Non-Condensing
Vibration	Random Operation 0.5G, 5~500Hz
Shock	15G Peak Acceleration (11ms. Duration)

Degree of Protection	IP65 on Front Panel/IPX1 on Ward Terminal
Drop	92cm (1 Corner, 3 Edge, 6 Surface)
Noise	Fanless
EMC	CE/FCC Class B, EN60950, Applied Part
Infection Control	Anti-microbial bezel material (optional)

1.4 Dimension



Chapter

2

Hardware Installation

2.1 Safety Precautions

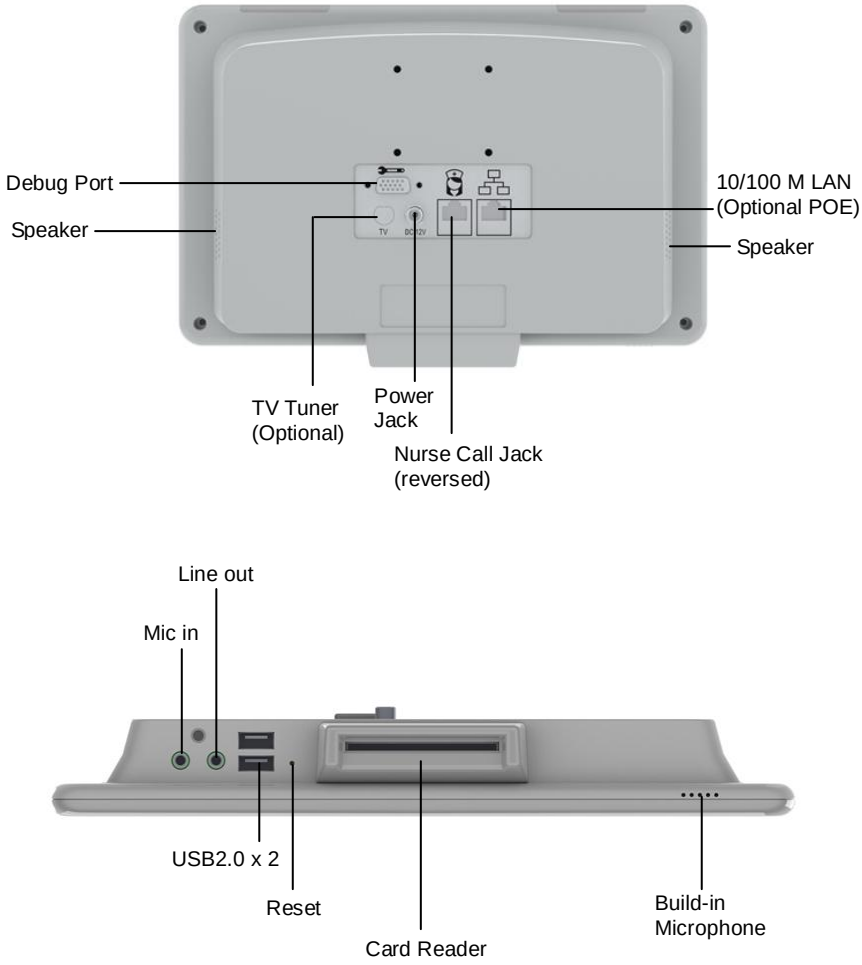
- *Always completely disconnect the power cord from your board whenever you are working on it.*
- *Do not make connections while the power is on, because a sudden rush of power can damage sensitive electronic components.*

- *Always ground yourself to remove any static charge before touching the board.*
- *Modern electronic devices are very sensitive to static electric charges; please remember to use a grounding wrist strap at all times.*
- *Place all electronic components on a static-dissipative surface or in a static-shielded bag when they are not in the chassis.*

2.2 A Quick Tour of the ONYX-BE101

Before you start to set up the ONYX-BE101, please take a moment to familiarize yourself with the locations and purposes of the controls, drives, connections and ports. The following figures illustrate the fully loaded bedside terminal with all applicable options.

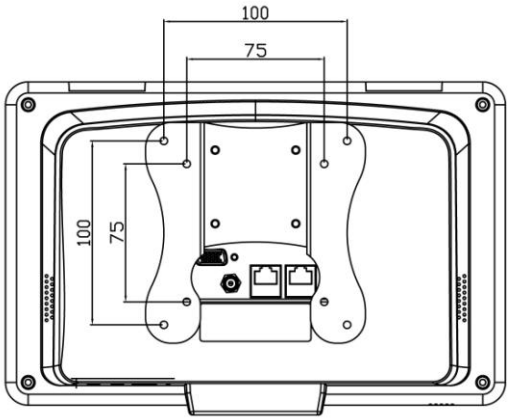
Picture 2.1: The Front Panel View of ONYX-BE101 Bedside Terminal



Picture 2.2: The Rear View of ONYX-BE101 Bedside Terminal

2.3 Mounting Installing

ONYX-BE101 is suitable for VESA75/100mm interface pads for desktop stand.



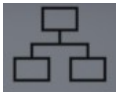
Attention: When operating the Medical PC, please allow 15cm clearance area for optimal heat dissipation

2.4 Powering on the unit

1. Connect the 12 DC adaptor to the DC jack of ONYX-BE101
2. The system will boot up automatically
3. You will see the system boot up with a penguin logo on the top left screen

2.5 Connecting the Unit

1. The unit can be connected to the internet thru the LAN port
2. It should be connected to a DHCP router for automatic IP assignment
3. If it's connected to a Ethernet switch, than you would need to manual enter the static IP address under the Android network setting
4. The unit can be connected to the RS232 port of a PC. However this should be done only by Maintenance technician for debugging purpose
5. There are 2 x USB type A port that can connect to USB disk, mouse, keyboard which is only accessible to the medical staff
6. Line-out/ Mic-in can be connected to the earphone and external microphone which is only accessible to the medical staff


Connect to the Router, Ethernet Switch, or Ethernet modem

Only accessible to the medical staff

Only accessible to the maintenance technician

2.6 Operating the Unit

1. The devices connecting to the unit can all be hot plugged.
2. Shutting down the system can be done by simply removing the power adaptor from the unit

Appendix

A

Miscellanea

A.1 General Cleaning Tips

Please refer to the following precautions and fully understand the warning details prior to cleaning the device.

1. Never spray or squirt the liquids directly onto any computer component. If you need to clean the device, please rub it with a piece of dry cloth.
2. Be cautious of the tiny removable components when you use a vacuum cleaner to absorb the dirt on the floor.
3. Turn the system off before you start to clean up the component or computer.
4. Never drop the components inside the computer or get circuit board damp or wet.
5. Be cautious of all kinds of cleaning solvents or chemicals when you use it for the sake of cleaning. Some individuals may be allergic to the ingredients.
6. Try not to put any food, drink or cigarette around the computer.
7. Please remember to clean up the computer by weekly.
8. ONYX Healthcare Inc. has tested and verified these cleaning disinfectants, CIDEX, Viraguard, Control III Disinfectant Germicide, Caviwipes, Dispatch Disinfectant Cleaner CLH69101, Puregreen 24 Disinfectant, can be used with the BE100. Use of any other disinfectants will void the warranty.

A.2 Cleaning Tools

Although many companies have created products to help improve the process of cleaning your computer and peripherals users can also use household items to clean their computers and peripherals. Below is a listing of items you may need or want to use while cleaning your computer or computer peripherals.

Keep in mind that some components in your computer may only be able to be cleaned using a product designed for cleaning that component, if this is the case it will be mentioned in the cleaning tips.

- **Cloth** - A piece of cloth is the best tool to use when rubbing up a component. Although paper towels or tissues can be used on most hardware as well, we still recommend you to rub it with a piece of cloth.
- **Water or rubbing alcohol** – You may moisten a piece of cloth a bit with some water or rubbing alcohol and rub it on the computer. Unknown solvents may be harmful to the plastics parts.
- **Vacuum cleaner** - Absorb the dust, dirt, hair, cigarette particles, and other particles out of a computer can be one of the best methods of cleaning a computer. Over time these items can restrict the airflow in a computer and cause circuitry to corrode.

- **Cotton swabs** - Cotton swaps moistened with rubbing alcohol or water are excellent tools for wiping hard to reach areas in your keyboard, mouse, and other locations.
- **Foam swabs** - Whenever possible it is better to use lint free swabs such as foam swabs.

Note:

1. We strongly recommended that you should shut down the system before you start to clean any components.

2. Please remember to clean up your computer every day.

Please follow the steps below before cleaning the device.

1. Close all application programs.
2. Close operating software.
3. Turn off power switch
4. Remove all device
5. Unplug power adaptor from the machine

A.3 Scrap Computer Recycling

If the computer equipments need the maintenance or are beyond repair, we strongly recommended that you should inform us as soon as possible for the suitable solution. For the computers that are no longer useful or work well, please contact with worldwide distributors for recycling.

The worldwide distributors show on the following website:

http://www.onyx-healthcare.com.tw/Contact.php

Note:

Please follow the national requirement for unit disposal.